DOCUMENT RESUME

ED 257 747 SO 016 560

AUTHOR Smith, Paul K.
TITLE An Investigation into the Effectiveness of Field Courses in Teaching Economics. Research Papers in Economics Education.
INSTITUTION London Univ. (England). Inst. of Education.
PUB DATE May 85
NOTE 65p.; For other research papers, see ED 229 290, ED 237 381, ED 223 508, and ED 242 635.
AVAILABLE FROM Dept. of Economics, Geography and Business Education, University of London Institute of Education, 20 Bedford Way, London WC1H OAL (Order No. BB21, 2 pounds).
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Academic Achievement; Case Studies; Comparative Education; Course Evaluation; *Economics Education; Educational Objectives; Educational Research; Experiential Learning; *Field Studies; Foreign Countries; Higher Education; Industry; Introductory Courses; Relevance (Education); *Student Attitudes; Student Motivation; *Teacher Attitudes
IDENTIFIERS England

ABSTRACT

This study showed that field work in economics is enjoyed by both teachers and students and appears to be a worthwhile aid to motivation. Sixty-eight students, ages 16-18, in England who were studying introductory economics participated in the study. All field work was done in private industry. Students were surveyed before and after the course to collect data on their attitudes toward the field course and to assess whether their perceptions of economics and of industry changed as a result of the experience. Teachers were also surveyed concerning their views on the importance of particular course objectives. The study concluded that field courses probably have little effect on students understanding of economics as measured by conventional examinations. Those attending the field course did not perform significantly better than those not attending. Nevertheless, both teachers and students emphasize the value of testing theories against reality and increasing the relevance of economics education. Certain student attitudes, for example those towards industrial relations, appeared to change. Almost all staff and many students commented on the fact that they had enjoyed the experience and had found it worthwhile. (RM)

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ED257747

RESEARCH PAPERS
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ECONOMICS EDUCATION

AN INVESTIGATION INTO THE EFFECTIVENESS OF FIELD COURSES IN TEACHING ECONOMICS

By

PAUL K. SMITH, B.A., P.G.C.E., M.A.

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An Investigation into the Effectiveness of Field Courses in Teaching Economics

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Paul K. Smith, B.A., P.G.C.E., M.A.

Summary

While some economics teachers have taken their students on field courses for many years, very little research has been undertaken to assess the usefulness of this type of activity. In this study, two particular field courses are examined, in order to appraise the validity of objectives normally laid down for such ventures. Teachers' views were obtained on the importance of particular objectives. Students were surveyed to collect data on their attitudes to the field course, and to assess whether their perceptions of economics and industry changed as a result of the experience.

The study concludes that field courses probably have little effect on students' understanding of economics as measured by conventional examinations. Nevertheless, both teachers and students emphasise the value of testing theories against reality and increasing the relevance of economics. Certain attitudes, for example those towards industrial relations, appear to change. Field studies are enjoyed by both teachers and taught, and appear to be a worthwhile aid to motivation.

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Research Papers in Economics Education, University of London Institute of Education. Economics, Geography and Business Education Department.

Author and Title

1. B. D. Cressey. "The Provision of Economics Education in One London Borough" November 1982
2. N. J. Carr "An Evaluation of the Use of Case Studies in Economics at Advanced Level in Schools" November 1982
3. K. R. J. Wood "Computer Assisted Learning in a Sixth Form Economics Course" February 1983
4. B. King "Economic Understanding and BEC National Level Students" September 1983
5. A. Pittwood "The Provision of Economics in the Business Education Council National Awards Curriculum, and the Demand for Economics Understanding by Industry" January 1984
6. Paul K. Smith "An Investigation into the Effectiveness of Field Courses in Teaching Economics" May 1985

I. INTRODUCTION

This case study examines two specific field courses, in order to appraise the validity of objectives normally laid down for such ventures. Teachers' views were obtained on the importance of particular objectives. Do field courses have a place in the education of 16-18 year-olds studying 'A' level economics? Might their objectives be achieved more fully by other means?

Special emphasis was placed on the possible change in student attitudes that may result from attendance, and a survey sought to discover student attitudes to economics, industry and economic issues.

II. Research Design

To claim that attendance on an economics field course improves the overall attainment of a student of economics as measured by, say, examination results, would be futile. There are many influences at work on the student throughout his course, and comprehension of concepts would be difficult to ascribe to any single cause. Even if a field course made a direct impact on a student's motivation, as is often claimed, it would be impossible to state whether the event was a cause or a symptom of this enthusiasm.

The course which was the subject of this study was optional, as it must be when it has to be paid for by the student, and thus the student from a poor household may have been excluded. For the remainder, it must be recognised that the more interested student is likely to have participated, so strengthening his existing motivation. This is a point to which we shall return.

The perceived benefits of a field course fall into three broad categories: those stemming from the student seeing economics as closer to reality; those associated with survey skills; and those fulfilling the general educational aims of the subject. Consequently, the study investigated these three broad categories of potential benefit.

The Surveys

If there are gains to be made by the student seeing, hearing and testing economic theory in reality, when this is presented to him at first hand, it might be reasonable to assume that this will have some impact on him and he will be aware of this impact. In a similar way, the general educational input, with special reference to industrial matters related to economics, will provide greater knowledge in areas where most students have little experience and so may contribute to a change in the student's preconceived ideas. It may further be conjectured that, in both cases, if any change does take place in the student's perceptions, this should be detectable and measurable. Thus questionnaires were designed in an attempt to detect such changes under these two broad headings, using different techniques.

While survey skills were also promoted as a benefit of economics field courses, it will be shown that surveys are relatively rarely employed and are probably not the most appropriate use of time on such an event. Therefore there is only passing reference made to this area of investigation.

In all, three separate questionnaires were designed: two to be completed by students and one by teachers of economics. The two student surveys should be taken together, although they use different techniques, as their aims were conceived jointly and they were seen as two means of gaining similar information. The teacher survey had a much broader aim: that of discovering what activities actually take place on economics field courses in Great Britain, and what teachers think are the benefits of such courses.

The Economics Attitude Survey (EAS)

The EAS was an instrument which attempted to measure student attitudes to the suggested benefits of economics field courses before and after the event, matching a group of students who attended a course with a similar group who did not. In order to do this, the two broad categories of interest were broken down into eleven areas of investigation, for each of which two statements were presented to the student, who was asked to state his view on a five-point Likert scale. The eleven areas of investigation, together with the statement numbers that eventually appeared on the survey, are shown in Table 1.

TABLE 1 : EAS: AREAS OF INVESTIGATION

CATEGORY	AREA OF INTEREST	STATEMENT NUMBERS
ECONOMICS AND REALITY	Student attitude to:-	
	1. Economics as a subject.	4, 16
	2. Economics as being personally useful.	9, 12
	3. The usefulness of economics in industry.	7, 19
	4. The government's use of economics.	13, 22
GENERAL EDUCATION	5. Unemployment	3, 14
	6. Management	2, 18
	7. Trade Unions.	5, 11
	8. Industrial relations.	15, 20
	9. Work practices.	10, 21
	10. Private enterprise in Britain.	8, 17
	11. Career implications of economics.	1, 6

The identification of these eleven areas of interest was only the first step; the actual statements had to be developed in order to test student opinion. A number of statements were trialled (see Appendix 1) with two groups of 'A' level Economics students. Neither group corresponded exactly to those who were to take part in the survey itself, but the two groups were not widely disparate. The first was a group of 25 students from a boys' selective school, almost at the end of their course, some of whom had attended an economics field course seven months earlier. The second group of 29 were from a girls' selective school at the start of their second year of economics. The trials did not take place at the same time and so statements were altered between the two trials, some being rejected and replaced, others being retained throughout. Each group was divided into two sections, and while some statements were common to both halves, others were not; hence the varied number of responses to each of the statements.

The responses were judged on two grounds: the number of "undecided" replies and the ratio of "agree" to "disagree" indications. A large percentage of "undecided" answers could have indicated a misunderstanding of the statement, or that the student had no view because he was unsure of the factual basis of the statement. In either of these cases the statement would have shown itself to have failed to elicit the information required. However, if the response was due to the student genuinely having no view on the subject, then this was a valid response. As the trials were conducted on an impersonal basis, it was impossible to distinguish between these reasons and thus a high "undecided" ratio was used as a criterion for rejecting the statement. However, the statements did differ in one important feature: some were aimed at what may be referred to as 'pure attitudes', in which the only criterion for judgement of opinion was the student's own value system, for example the statement: "Trade Unions have too much power in the economy"; other statements required a response to empirical evidence, to which it is possible to have an attitude, but one that may be mistaken; this does not invalidate the attitude itself. An example of such a statement may be: "What is good for companies such as B.P. and I.C.I., is good for Britain". In this latter case a higher ratio of "undecided" opinions was to be expected, as the genuine "don't know" response is not only due to an equal weighing of pros and cons in the student's mind, but also as a result of not possessing the empirical knowledge on which to base a view. Thus a higher "undecided" rate was deemed as being acceptable with such statements. It can also be argued that the field course was aimed at enlightening exactly this area, and so changes from the "undecided" category were of even greater interest and, indeed, more likely to occur than changes in entrenched opinions, which may be reflected in the initial responses to the 'pure attitude' statements.

The second criterion for judging a statement was a heavy bias in responses towards either "agree" or "disagree". Such may show a badly worded statement that automatically promotes a particular reply, and as a consequence the measurement of responses along a continuum would be unable to differ to any great extent between pre- and post-test results. A crude measure was used to calculate this bias, simply:-

$$r = \frac{\text{"agree" + "strongly agree" replies}}{\text{"disagree" + "strongly disagree" replies}}$$

As can be seen from Appendix 1, insufficient statements were piloted in order to enable the statements to match up to the criterion of judgement suggested. In some cases only three statements were piloted in order to evolve two statements on the survey. However, given limited resources, a compromise had to be made between the number of statements trialled and the number of responses to each statement. The survey evolved due to the responses of the students, some statements remaining on all trial surveys, while others which proved unsatisfactory were transformed. Ideally this process would have continued until a satisfactory series of statements were produced. As time was a constraint and the number of available students limited, the process was not completed. Nevertheless, the criterion of a 20% plus "undecided" response was decided upon for statements of 'pure attitude' and this was matched in Areas 1, 5 and 7 with only a slight over-run in one statement. In the other eight areas of interest, a high "undecided" reply rate was judged on its merits, as to what experience the student was likely to have of that particular item. This can be seen particularly in Areas 3, 6 and 9, where the student is unlikely to have had any insight. In addition it is interesting to note that Area 11 also provoked a high "undecided" response, which may show the lack of career decision and concern rather than anything more significant to economics education.

A high ratio of "agree" to "disagree" responses was regarded more seriously. In this case a 'rule of thumb' of $1/3 < r < 3$ was considered to be acceptable, but not ideal, given the circumstances. The closer the ratio approached unity, the more preferable the situation was to be regarded. Even on this lax criterion, some of the statements failed the test and consequently their results must be treated with caution. Again, areas outside the students' experience proved difficult to evaluate, especially with reference to the government's use of economic theory (Area 4), management's use of economics (Area 3) and career implications of 'A' level Economics (Area 11). In addition, the students' attitude to trade unions tended towards the boundary of acceptable responses, but these statements were not altered, as their simplicity was seen as their main attraction. It transpired that a statement that presented the student with no consequences of the view he expressed gave a more biased result than a second attempt that put forward a 'cost'. Thus, in Area 3, adding that an economics course for a manager would mean two weeks off work, brought a much more balanced view. Similar results occurred in Area 9, where regional aid was not just seen as a hand-out, but as a cost to other areas of government expenditure. Finally, the question in Area 10 that referred to the F.T. Index was rejected because the students tended to judge the Index as a measure of prosperity rather than private industry providing the prosperity in Britain and therefore it failed in its purpose.

The eventual questions were compiled into a survey, being sequenced by random number tables (see Fig.1). The students were asked to provide their initials so that pre- and post-field course surveys could be paired to provide a group of attenders and a control group of non-attenders.

Fig.1

ECONOMICS ATTITUDE SURVEY

Below are listed a number of statements. Circle the number which most closely corresponds to your opinion of the statement.

Please write your initials here _____

		STRONGLY AGREE	AGREE	UNDECIDED	DISAGREE	STRONGLY DISAGREE
1.	Employers view economics as a beneficial 'A' level subject to have taken.	1	2	3	4	5
2.	British managers do a good job.	1	2	3	4	5
3.	Government assistance to depressed areas should be raised by reducing other subsidies to industry.	1	2	3	4	5
4.	Economic ideas are used in the real world.	1	2	3	4	5
5.	The government should control the power of trade unions by legislation.	1	2	3	4	5
6.	Studying economics will help me get a job.	1	2	3	4	5
7.	Managers would find it useful to take two weeks off to follow an economics course.	1	2	3	4	5
8.	When private industry does well, Britain prospers.	1	2	3	4	5
9.	Economic theories are useful to me.	1	2	3	4	5
10.	It is easy to get away with doing nothing in a factory.	1	2	3	4	5
11.	Trade unions have too much power in the economy.	1	2	3	4	5
12.	I use economic concepts to analyse situations.	1	2	3	4	5
13.	The main considerations in government planning are economic.	1	2	3	4	5
14.	The government should raise the level of its spending.	1	2	3	4	5
15.	Strikes are common in British factories.	1	2	3	4	5
16.	Economics is practical.	1	2	3	4	5
17.	What is good for companies such as B.P. and I.C.I. is good for Britain.	1	2	3	4	5
18.	Management practices in Britain are sound.	1	2	3	4	5
19.	Businessmen use economic theories in day-to-day decisions.	1	2	3	4	5
20.	Trade unions and management usually co-operate.	1	2	3	4	5
21.	People on the shopfloor work hard.	1	2	3	4	5
22.	Decisions taken by the Chancellor of the Exchequer are made on mainly economic grounds.	1	2	3	4	5

Thank you for your co-operation.

The Economics Field Course Survey for Students (EFCS-S)

The second student survey was designed to cover the same ground as the EAS. However, its approach was very different. Whereas the EAS was prescriptive, allowing the student no facility for explanation or comment, the EFCS-S did provide this opportunity. By this means it was hoped that the deficiencies of the statements in the EAS would be supplemented by student comment in open-ended questions. The two categories of investigation were again evident, with emphasis on the general educational aims of the field course, dealing in more detail with policies and their consequences. However, other questions were aimed at the usefulness of economic theory in reality, and students were additionally asked for their view on manufacturing industry, of which they would have had little or no experience prior to the field course and so it would not have been suitable for the format of the EAS (see Fig.2).

It was seen as important to include a "don't know" option in all the questions of opinion, partly because the student might not want to answer the question, but mainly to provide an 'easy way out' to many students for whom any change in view had either not taken place or was not significant. Consequently, the replies to the subsequent open-ended questions, largely asking the question: "Why?" can be seen as a judgement of the strength of the change of opinion; not only had the student recognised that his views had changed, but he was willing to express this change on paper. Such a method did not completely eliminate the purposely erroneous answer, but these are more easily detectable from the lack of supportive evidence provided. Further to this, they must be assumed to be randomly distributed through the responses.

In addition to the more detailed evidence the EFCS-S provided for the EAS, it also attempted to evaluate the benefits of the field course, as seen by the students. It must be recognised that even if a course was organised with the specific aims already set out, these aims might not be achieved in practice, and even if the teacher thought they were, the students might not agree.

If the students were not aware of the aims of the course after the event, this would be a serious qualification and would greatly weaken the case for these aims being justifiable. Consequently, the first three questions on the EFCS-S were designed to check on what the students thought were the aims of the field course in general and a visit in particular.

The EFCS-S was followed up with interviews of a random selection of those students who attended the course. This was an attempt to delve beneath students' written views, to determine how they came to the conclusion they did on each issue and what evidence presented to them on the course they felt to be important. However, it must be noted that these interviews, although voluntary, were conducted by an interested party, in some cases their own economics teacher, and hence answers may not be totally reliable.

ECONOMICS FIELD COURSE SURVEY

It is not necessary to write your name on this paper.

Please delete where appropriate.

1. a) Would you recommend the economics field course to another student? YES/NO/DON'T KNOW

   b) What reasons would you give for this opinion? .....

   .....

   .....

2. a) From the economics point of view, which was the most helpful visit that you attended? .....

   .....

   b) Why was this? .....

   .....

3. a) From the economics point of view, which was the least relevant visit that you attended? .....

   .....

   b) Why was this? .....

   .....

4. a) Did anything surprise you about activity inside a factory? YES/NO/DON'T KNOW

   b) If YES, what? .....

   .....

5. a) Will you eventually consider employment in manufacturing industry? YES/NO/DON'T KNOW

   b) Has the field course changed your opinion of manufacturing industry? YES/NO/DON'T KNOW

   c) If YES, in what way? .....

   .....

6. a) Have you previously been to the area where the field course was based? YES/NO

   b) Did it differ from what you expected? YES/NO/DON'T KNOW

   c) If YES, in what way? .....

   .....

ECONOMICS FIELD COURSE SURVEY (Continued)

7. a) Do you think that more money should be given to that area by the government? YES/NO/DON'T KNOW

   b) If YES, what do you think would be the most effective way of doing this? .....

   .....

8. a) Has the field course changed your opinion of whether economic theory is used in industry? YES/NO/DON'T KNOW

   b) If YES, in what way? .....

   .....

9. a) Has the field course changed your attitude to the state of industrial relations in British industry? YES/NO/DON'T KNOW

   b) If YES, in what way? .....

   .....

10. a) Has the field course altered your opinion as to what extent the government can influence the economy? YES/NO/DON'T KNOW

   b) If YES, in what way? .....

   .....

Thank you for your co-operation.

The Economics Field Course Survey for Teachers (EFCS-T)

It was hoped to gain a consensus of opinion from teachers who organise economics field courses as to what were their aims. These aims should be seen in the light of experience and therefore valid for their group of students. Rather than give a completely open question to elicit what were perceived as the benefits of the field course that they organised, it was decided to present a list of possible benefits for the teachers and for them to indicate the strength of importance as they saw it of their own field course. This was followed by the option to specify any additional benefits of the course and an open-ended question in which it was possible to re-emphasise the opinions already given (see Fig.3).

While the responses to question 10 of the survey were seen as important, the opinions that were expressed must be examined in the context of the specific field course that took place. Thus some factual information was required on the nature of the event, as this could explain the views of the teacher. In addition, this factual information may have given an indication of what activities were common on courses organised by school economics departments in Great Britain. One aspect of this may have been the management of a survey, and a question was included in an attempt to estimate the incidence and impact of such survey work.

It must be stressed that this survey could not give any indication of the extent of field course activity, as the sample was not random, even among schools that teach economics. Nevertheless, some light may be shed on how typical were the field courses conducted in this case study.

The Students

Students from two schools participated fully in the surveys, the whole of the second year sixth form economics group forming the set of students whose views were sought.

School A was a boys' selective school and School B a mixed sixth form college, both being local authority maintained and situated in south-east England on the outer fringe of the London commuter belt. In both schools the field course was organised in the middle of the fourth term of the 'A' level Economics course and every student was given the option of attending. Attendance meant missing a week of term time and also the payment of an amount of money that was spent almost exclusively on accommodation and transport for the group. Many and varied reasons may be given for attendance or non-attendance, and some of these will be investigated. However, this self-selection was a potential source of bias, as the non-attenders were to form the control group by which changes in student views on the EAS were to be evaluated. Bias could exist between those in the experimental group and the control group on many grounds, some of which may be identified as sex, ability, perceived preference for economics as opposed to other school subjects and interest in school in general. While it is not possible to evaluate all the sources of potential bias between the two groups, an attempt has been made to point out differences between the groups where they exist.

ECONOMICS FIELD COURSE SURVEY

Please state:-

1. The town in which your school is situated .....

2. The age group or examination course of pupils on the field course .....

3. The duration of the field course .....

4. a) Was the course residential? YES/NO

   b) If YES, where was it based? .....

5. a) Was only your school involved? YES/NO

   b) If NO, could you give a description of the other school (s) involved? .....

   .....

6. The approximate number of field courses you have conducted .....

7. Roughly what proportion of the working time on the field course was devoted to the following activities? (State in most convenient units: days, hours, sessions, etc.):-

   a) Basic tour of the area
   b) Visits to private manufacturing companies
   c) Visits to private service industries
   d) Visits to nationalised industries
   e) Visits to local or national government institutions
   f) Listening to talks from trade unionists (not part of above)
   g) Conducting surveys
   h) Other (please specify) .....

   .....

   .....

   (If you have a copy of your programme, it would be very helpful if you could enclose it)

8. a) Did you conduct any surveys or first-hand research on the course? YES/NO

   b) If YES, what topics did you aim to cover? .....

   .....

ECONOMICS FIELD COURSE SURVEY (Continued)

9. How important do you see the following possible benefits to the students of an economics field course? (Please tick the appropriate column):-

	Of major importance	Of minor importance	No opinion/ don't know	Unimportant	Irrelevant
a) Gaining examples of economic theory					
b) Testing economic theories against reality					
c) Meeting adults in their working environment					
d) Seeing relevance of economic theory					
e) Gaining up-to-date information					
f) Viewing 'real life' inside a workplace					
g) Gaining survey skills					
h) Raising motivation towards economics					
i) Seeing life in another area of the country					
j) Career implications					
k) Improving teacher-pupil relations					
l) Pupils meeting students from another school					
m) Enjoyment					
n) Teacher gaining benefits of illustrations					
o) Other (please specify)					
.....					
.....					

10. a) On the whole do you consider the field course to be a success? YES/NO

b) Can you give reasons for this opinion? .....

.....

.....

11. a) Would you consider conducting a similar venture next year? YES/NO

b) If NO, could you briefly state why not? (If different from 10b)

.....

N.B. All returns will be confidential and no school or teacher will be identified by name.

Thank you for your co-operation.

a Sex

It was only possible to investigate the differences in sex make-up of the group of attenders and non-attenders in School B. Here there was a slight tendency for less girls to attend, but this was shown not to be statistically significant; however the numbers in each group were small. A scoring system of Female = 1; Male = 0 was used and the resulting mean and standard deviation analysed by use of the student t statistic for a two tailed test. This was necessary due to the small numbers and the possibility of their being a bias towards either males or females in either of the two groups.

TABLE 2 : SEX OF ATTENDERS AND NON-ATTENDERS

	ATTENDERS	NON-ATTENDERS
n	44	12
μ	0.318	0.5
σ	0.466	0.473
t	-1.1811	

b) Ability

Participation rates on the course could have differed between ability groups within the 'A' level Economics group. Although not a perfect measure of ability, the lower sixth year examination results were a convenient source of student performance, albeit five months old by the time the field course took place, although far closer to the time when the student had to make the decision to participate. The two schools used different examinations, but both final scores were a combination of different examination techniques which consisted of essay, multiple choice and data response questions. It could be argued that these examinations were not seen as very important by the student and therefore did not reflect his true ability, however they may be taken as a rough proxy for ability with there being no perceived reason why student results in either group should fall significantly below or above their approximate ability; those that do must be assumed to be randomly distributed between the groups.

The raw scores of the examinations were taken in preference to a rank order in order to reflect the distribution of ability more truly.

TABLE 3 : ABILITY MEASURE OF ATTENDERS AND NON-ATTENDERS

	SCHOOL A		SCHOOL B	
	ATTENDERS	NON-ATTENDERS	ATTENDERS	NON-ATTENDERS
n	24	14	44	12
μ	37.08	39.21	46.8	44.9
σ	8.76	8.76	10.24	10.27
t	-0.722		0.544	

Again, a two tailed t-test revealed no statistically significant difference between the mean scores of the two sets of students in either school. There was some evidence in School A that the pupils at the top and bottom of the ability range were more likely to attend the course, rather than those in the middle; however, this was not confirmed by School B. The results were generated by dividing the student examination results into quartiles and redividing them between groups of attenders and non-attenders, expressing this as a percentage of that particular set. Bias could then be seen by inspection.

TABLE 4 : QUARTILE MEASURE OF ABILITY OF ATTENDERS AND NON-ATTENDERS

	SCHOOL A		SCHOOL B	
	ATTENDERS	NON-ATTENDERS	ATTENDERS	NON-ATTENDERS
n	24	14	44	12
QUARTILE	%	%	%	%
1st	27	21.4	23.75	27.3
2nd	18.75	35.7	30	9.1
3rd	18.75	35.7	22.5	36.4
4th	35.4	7.1	23.75	27.3

Thus it may be concluded that as far as the lower sixth form examination results are a measure of ability, they show no statistically significant bias between the two groups in either school.

c) Student-perceived Preference for Economics

The student's own perception of economics, as opposed to the other subjects he was studying, may be a proxy for his motivation to economics, although no test of his attitude to study in general. It was possible to gain an insight into the student's own views of the subject in School A, where almost all of the 'A' level students completed a careers form answering the question: "Which 'A' level subjects do you prefer?". Such an answer involved no hidden pressure to state one particular subject as it was intended to help in a subsequent careers interview and so could be seen as bias-free. This form was completed in the summer term after the internal examinations and thus the student had a similar amount of knowledge of his ability in each subject as he had when deciding whether to attend the field course. Such a measure of preference only ranks the subjects being studied by the student and does not place them on an absolute scale. Thus, the student who is not interested in any subject, but marginally prefers one, would be given the same weighting as a student who is fascinated by all his studies, but has similarly to select a preference.

A scoring system to quantify these results was devised, but it was complicated by students who were studying only two 'A' level subjects and also by those who expressed only one preference, which was not economics, as it was not known if economics was a second or third preference. However, the following system was devised to give representative weighting to all preferences and using this method the results were calculated as shown in Table 5.

3 pts, 2 pts, 1 pt	For economics being mentioned as 1st, 2nd or 3rd preference by a three 'A' level student
$2\frac{1}{3}$ pts, $1\frac{2}{3}$ pts	For economics being mentioned as 1st or 2nd preference by a two 'A' level student
$1\frac{1}{2}$ pts	For economics not being mentioned by a three 'A' level student who expressed only one preference

TABLE 5 : STUDENT PREFERENCES FOR 'A' LEVEL ECONOMICS

	ATTENDERS	NON-ATTENDERS
n	23	12
μ	1.862	1.861
σ	0.77	0.54
t	0.01	

As can be seen from the calculation, there was no statistically significant difference between the two groups, as measured by a two tailed t-test, as far as this method of expressing student interest in economics was concerned. Both those who viewed it as their first preference, and those who considered it as their last preference, attended the field course, although it is not claimed they did so for the same reason.

d) The Pre-course EAS Returns

A different method of testing for any significant bias was to use the information given by the students when they completed the EAS prior to attending the field course. This could indicate that students who did attend held different views of the subject and different opinions on economic matters from those who did not attend, though it would not shed any light on why this might be.

Consequently, the EAS returns were checked with regard to comparing the responses of those students who eventually did attend the course with those who did not. There is no reason to believe that the views of the total set of economics students in both schools were the same. Indeed it would be strange if they were, since they were subject to different influences both inside and outside the classroom. So the data from the two schools were kept separate. The mean score for each question from the group of attenders was compared with that for the non-attenders by use of the t-test and the resulting t figure read for levels of significance at the relevant number of degrees of freedom. In all cases the mean of the group of attenders was taken first, so a positive statistic showed that they had a higher mean score for that statement, i.e. they disagreed with the statement more than the group of non-attenders from the same school.

As can be seen from Table 6, only three statements showed a significant difference of opinion between those who attended the course and those who did not. All the other differences could be explained by a random distribution of the sample of students. It would be fair to state that the opinions elicited by the EAS failed to show any special divergence between the two groups, as among 44 tests there would be a 0.05 chance of 2.2 of them proving erroneously - this is borne out by the data and by inspection there would appear to be little pattern to the data.

e) Reasons for Non-Attendance

An alternative method of seeking the factors potentially causing bias in the two groups of students would be to investigate the reasons given for non-attendance. Two warnings must be given in this respect: firstly, not all the non-attenders were interviewed; and secondly, the answers were given to a teacher, in some cases their own economics teacher, and thus, despite every effort being made to put the student at ease, answers might have been given to please the teacher rather than to reveal the truth.

TABLE 6 : ATTITUDE TO ECONOMICS BETWEEN ATTENDERS AND NON-ATTENDERS

STATEMENT NUMBER	SCHOOL A t	SCHOOL B t
$N = n_A, n_N$	24, 14	40, 11
16	-0.91	0.195
4	-0.184	1.079
12	-0.258	-1.029
9	-0.085	-1.259
19	0	0.327
7	0.18	0.311
13	-1.169	-0.413
22	-1.086	-2.913 ***
14	2.297 **	-0.833
3	-0.361	1.107
2	-1.113	1.257
18	0	1.229
11	-1.259	2.006 **
5	0.365	1.542
20	0.883	0.551
15	0.329	-0.226
10	-0.27	1.046
21	-0.677	-0.993
8	-1.377	0.711
17	0.536	0.986
6	-0.25[illegible]	-1.029
1	0.537	-1.316

n_A, n_N denotes number in group attending and not attending the course, respectively

* significant at the 0.1 level of significance

** significant at the 0.05 level of significance

*** significant at the 0.01 level of significance

Given these two provisos, two reasons for not attending seemed to predominate: lack of interest in school and/or economics; and the cost, in financial terms. These were well illustrated by two comments given by two students who did attend the course, speaking about those who had not joined them:-

> "Some people thought that economics is pretty boring and said they didn't want to go on that trip because it would be boring"

and

> "There are a lot of trips and a lot of people said I cannot afford to go on both; and people have Saturday jobs which they didn't want to sacrifice".

However, it would be too simplistic to say that the distinction between the two groups was just one of money and interest, since it was difficult to distinguish between lack of interest in school and in economics in particular. Nobody mentioned the time lost in other school subjects as being a reason for not attending and perhaps, with hindsight, with some justification as, to quote one student:-

> "Mathematics lessons virtually stopped for a week".

This does not imply that no mathematics was learnt during the week, but that, in the student's view, it could be discounted. However, 'cost' was seen more in financial terms, with the value of other courses being weighed against that of economics. In some cases the economics field course was placed second to that organised by the Geography Department, held prior to the economics one in both schools. Financial considerations were also apparent with the effect on part-time employment, most of which extends further into the week than simply Saturday. Here the most extreme case was of a boy who was informed by his employer that if he missed Friday evening, he would be sacked - he did not attend the course!

It is difficult to quantify the reasons given for not attending the course, but an attempt has been made on the basis of the number of occasions each reason was mentioned by students. However, it is to be noted that only a small number were asked, consequently the two schools were combined for this exercise, and it was a teacher who made the inquiry.

TABLE 7 : REASONS FOR NON-ATTENDANCE

REASON: n	NO. OF MENTIONS 11
Lack of interest in economics / Lack of interest in school	8
Cost of field course	7
Potential loss of employment	1

As can be seen, some students gave more than one reason, and it became impossible to distinguish between different reasons for lack of interest, so these were combined.

f) Summary

Although an attempt was made to distinguish between the students who attended the course and those who did not, it must be concluded that a major source of bias was not identified. This was probably because the reasons for attending and not attending differed greatly between individuals and were therefore not identifiable by looking at the whole group. Nevertheless, the factor of 'interest' must be recognised as important, but as to whether this is related simply to interest in economics, or interest in academic study in general, is open to doubt. The fact that those who did not attend had a slightly more positive attitude to the usefulness of economics may give some weight to the latter belief, but it cannot be assumed that all those who did attend, did so for positive reasons. The other factor that may explain the source of recognisable difference between the groups is cost, especially when compared with other educational expenditure of a similar nature.

The Field Courses

In total, 68 students attended one of the two field courses, based in South Wales and South Yorkshire, and to an extent each had a different experience, saw different things, was given different information and took with him different preconceived ideas. Although certain experiences were shared, there were in fact six different groups in existence: two from School A and four from School B. This was because both courses divided their students into minibus-sized groups for ease of gaining factory visits, and while an attempt was made on the part of the organisers to present to each student a range of British industry, this was not always possible. Indeed the experience at two different, though similar factories would be quite different depending on what exactly was happening there at the time of the visit and the individual company employee who was in charge of the tour. Even if the group was divided between two or more guides within the factory, the student experience would vary. Thus it would be pointless to divide the group experiences on the basis of places visited in order to compare them.

During the course, all the groups had eight visits and to some extent the experiences of one could be contrasted with that of another, so reducing the risk of grave 'misinformation'. In addition, both courses held a meeting in the evening lasting between one and two hours, in order to consolidate the major lessons of the day and also to hear of the experiences of the other group(s). It would be true to say that this sharing of information went beyond the official meeting, with informed student discussion frequently taking place. These experiences, even at second-hand, may have had an influence on the student, even if only in the way he viewed the next day's events.

Surprisingly few students had been to these areas before and so it was valuable that all groups received an introduction to the area on the first morning.

TABLE 8 : INCIDENCE OF STUDENTS PREVIOUSLY VISITING THE AREA

Previously visited the area: n	SCHOOL A 24	SCHOOL B 40
Yes	3	6
No	21	34

These introductions varied: one was a talk on the problems of South Wales and the role of the Welsh Office, the other was a talk and tour of Sheffield from an economic history viewpoint. However, in many ways the same impression was given, and re-emphasised throughout the course: that of an area very different from the student's home district in south-east England. Both areas had higher levels of unemployment and suffer from industrial decline due to an historically heavy dependence on traditional industries, particularly steel and coal. However, in South Wales the students only saw these industries from the outside, the field course concentrating on the new, replacement industries, whereas in South Yorkshire all the students visited at least one steel works.

The concentration of both courses was on private industry, where the representative gave an introductory talk on the company, followed by a tour of the factory and then a question and answer session with either that person, or a group of managers. The visits lasted between two and three hours. While these arrangements were common to almost all visits, they give no indication of the quality of the student experience. On some occasions, a wide range of managers were available to answer questions that the students asked on almost every aspect of the company. At other times, the Personnel Officer had to admit that he knew nothing of the financial side of the business or that decisions were taken elsewhere, at head office. On one occasion, the company had completely forgotten that the visit was to take place and hastily enrolled someone to show the group round. Thus the student experience was very different in each case. Although there is no evidence to support such a claim, it is hoped that such experiences 'evened out' between the six groups over the eight visits.

Although analysis of the visits is impossible, the range of visits experienced by each student is shown, with all students visiting a large, capital intensive works; a small, privately owned company; a labour intensive production line firm; a branch factory; a head office; and in most cases a nationalised industry.

TABLE 9 : TYPE OF COMPANY VISITED

TYPE OF COMPANY/ FACTORY	SCHOOL A		SCHOOL B			
	GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5	GROUP 6
Small (< 200 workers)	1	1	1	0	1	1
Large (> 1000 workers)	1	1	1	0	1	1
Privately Owned	2	1	3	1	3	1
Head Office	2	2	4	2	4	3
Branch Factory	4	4	3	4	3	4
Capital Intensive	2	3	2	2	2	2
Labour Intensive	3	2	2	3	2	2

The experiences could be said to be varied, though not necessarily in the same way. In addition, three groups heard a talk by government agencies on their particular role in the economy.

However, major differences did occur, with the emphasis on new technology industries typical of the M4 corridor in South Wales contrasting with the private steel making and using companies of South Yorkshire. While both courses were based in youth hostels, one was situated in the heart of the Rhondda Valley, the other in the Peak District. Such matters must have coloured some students' attitudes to British industry in general and the region in particular. However, this did not necessarily extend to their impressions of economics being illustrated by industry.

Each student had to write a report at the conclusion of the course, which would be compiled into a booklet. The students formed into groups of their own choice, but in School B the report concentrated on one particular visit, whereas in School A the emphasis was on one economic aspect of the course as a whole. Thus the student's short term aim on each course differed and this must have influenced his experience.

Many of the aspects of the two courses are similar and indeed are similar to many field courses organised by economics departments in schools throughout the country (see below). This is not surprising, as the two originated from the same source, and though they have slightly diverged, they retain many similarities. To analyse the two courses, or indeed the experiences of the six groups on the basis of the type of firm visit, would be to emphasise the wrong variable. Far more important was the quality of each visit from an economic viewpoint. Thus, we must accept that the effects of the course were different for each student and attempt to analyse threads common to a field course in general that run through student opinion.

3. Results*

In order to analyse the effect and effectiveness of the economics field courses, three pieces of data were taken together: firstly the pre- and post-course EAS results; secondly the EFCS-S replies, completed by those who attended the courses; and finally quotations from interviews held with students who attended the courses.

It is to be noted that some of the statements posed on the EAS were far from perfect, and hence in some cases a change of opinion was difficult to detect by statistical methods. In addition, it was necessary to interpret the statistics using a linear scale and it does not follow that this was appropriate, as the interpretation of different opinion options need not indicate equal weight. For example, a movement from "undecided" to "agree" may not be of equal significance to "strongly agree" changing to "agree".

The student surveys and interviews were completed in the knowledge that the organiser of the course was going to read the replies, and although the student did not have to indicate his name and was told the exercise was for positive information in helping to plan future courses, it must be expected that true sentiments were not fully revealed. In both schools, the interviews were given on a voluntary basis after the questionnaires had been completed. This was partly on a random sample, as private study lessons had to coincide with the availability of the researcher. In some cases such interviews had the disadvantage of the interviewer being the student's economics teacher, in others the problem of dealing with a stranger. On balance the former appeared to be more successful, which was assisted by the fact that the two had been on the same field course and so had a knowledge of shared experiences.

Student Perceived Benefits

It has been claimed that students obtain many benefits from attendance on a field course. These may be divided into those directly related to the 'A' level Economics course, those that are largely social and those that are of a general educational nature. The first three questions on the EFCS-S attempted to evaluate the student's own views of the benefits of the course by asking for substantive evidence in support of his opinions of the course in general and individual visits in particular. It was hoped that such responses would show the student's underlying evaluation of the events that took place and point out whether they were being judged by criteria related to economics or on more general grounds. It was hoped that the material required was sufficiently disguised to yield valuable results despite it being requested by an economics teacher.

The student replies to Question 1 on the EFCS-S were quantified on the simple basis of scoring each reason given in support of an answer and these were grouped as seemed appropriate. Some students gave more than one reason and so were given greater weight in the results.

*The detailed tables of results are available on application to the author, at 37, Silverdale, Barming, Maidstone, Kent.

TABLE 10 : STUDENT RECOMMENDATIONS FOR A FIELD COURSE

REASON GIVEN:	NUMBER OF MENTIONS:		
	SCHOOL A	SCHOOL B	TOTAL
n	24	40	64
Economic theories used in reality	19	22	41
Interesting	3	17	20
Enjoyable	3	16	19
Generally informative	3	9	12
Seeing working environment	7	5	12
Providing economic examples	3	1	4
Visiting a different region	1	3	4
Social interaction	0	2	2
Meeting managers	0	1	1
Increasing interest in economics	1	0	1

It is to be noted that four students who attended the field course from School B did not complete the post course EAS or the EFCS-S and one student who did not attend failed to complete the EAS, hence the slightly reduced sample size. Difficulties arose in attempting to group the responses and in the end it proved impossible to distinguish between students identifying such claimed benefits as testing economic theories against reality and seeing the relevance of economic theory. Common responses were:-

"The course has enabled me to put theory into practice",

"It gives an opportunity to see how economic theory is used in industry and demonstrates the fact that economics is practical", and

"Gives you a chance to witness the realities of industry instead of just theoretical models".

While it is possible to dispute the truth of such statements, it must be admitted that these students had judged the field course with reference to events relevant to economics, and started to apply practice to the theory or vice versa. In a similar though less sophisticated way, a total of four students stated that the course had provided "plenty of examples" for theories discussed in the classroom. Both reasons are perhaps best summed up by one

"Basically the theories that you do in lessons you get a chance to see in practice and how a firm uses it, and it is therefore much more relevant to you and you can use the example in an exam; if you understand it better, you are going to remember it".

Many reasons cited for the success of the course were more general, and while being valid as reasons, were less substantial from an economics point of view. Comments such as:-

"It gives a useful insight into the real world of industry",

or more generally,

"You'll probably never get another chance to see how different things are made"

emphasise the practical side of the course, though not what it aimed to achieve. This viewpoint was best summed up by the student who wrote:-

"Visits were informative, though not always on economics".

If this were the unanimous view, then the justification for field courses in economics would be tenuous. In a similar way, those students who commented on the fact that they had been able to visit a different area did not specify advantages for their economics studies. It is noteworthy that such comments were more common in School B than School A, probably due to the quality of the visits; a matter to which we shall return.

A third group of reasons for recommending the course were more related to business studies or more specifically, industrial sociology, than economics:-

"Useful for seeing what life inside a factory was like",

or

"It is good to see the contrast in lifestyles between people in industry and here".

A first view of the working environment obviously left its mark on many, as was to be expected, but again this was not the purpose of the course. However, many such reasons were expressed along with other explanations.

Finally, it is encouraging to note that many students thought the event sufficiently enjoyable to mention the fact and in two cases this was articulated in greater detail, with the resulting social implications:-

"Brings the group closer together",

and

"... now that we know each other better, we get on well in class",

which may well increase the student's motivation towards classroom study in the subject. In every case such statements about the enjoyable nature of the course were mentioned second and hence it could be assumed that they were of secondary importance in the student's mind. All but one of the 64 respondants to the EFCS-S would recommend the course to future students, for whatever reason, and even this single exception queried the timing rather than the content of the event.

In all, two-thirds of the students who completed the questionnaire mentioned economic theories being seen in, or tested against, reality as the reason for recommending the course to other students, and this, together with other reasons that were related to economic theory, accounted for 40% of all statements given. Perhaps more than one student saw the sequence of events leading through the following train of thought, as articulated by two interviewees:-

> "(The course) did more for me because instead of sitting there talking about the theories of the firm, this brought it into perspective really well. Before, I thought that economics was a textbook subject, but you can actually see the theories applied and how they actually work. They're not in their purest form, but it shows that they are there and are practical",

and

> "It helps you think about the subject, like before you thought 'a lot of useless theory, what's the point of it?' and now you can see the way it's applied".

Much the same results were to be expected in answer to the next two questions on the EFCS-S, but in these cases the student was asked to concentrate on the individual visits, rather than the course as a whole. In the event this brought a slightly different set of results with more emphasis on economic theory being put into context and exemplified by the visit or the management talk. The full results are shown with replies to Questions 2 and 3 having been combined, as the same reasons were given for both questions, the latter simply being the negative.

TABLE 11 : REASONS GIVEN FOR A GOOD OR POOR VISIT

REASON GIVEN:	SCHOOL A		SCHOOL B		TOTAL
	Q2	Q3	Q2	Q3	Q2+Q3
n	24		40		64
Illustration/Lack of economic theory	16	17	16	21	70
Example or not of an economic point	11	7	12	4	34
Good/Poor speaker	8	6	10	8	32
Good/Poor visual impact	5	3	4	8	20
Not a 'typical' firm	-	2	-	1	3
Poor conditions for visit	-	-	-	2	2
Expectations not fulfilled	-	1	-	-	1
Helpful for 'my' report	-	-	1	-	1
Duplication of previous visit	-	1	-	-	1

Here more than two-thirds related their reasons directly to economic matters. Many students mentioned examples of what had been illustrated by the visits, such as:-

> "Many economic ideas were shown here, such as competition, rationalisation and investment", and
>
> "Economies of scale, demand and the market structure were shown well".

However, these comments were largely dependent on the manager being able to answer questions posed by the students:-

> "They had a different person for each aspect of the firm and were able to answer all our questions".

Exactly the opposite reasons were given for a poor visit, for often such units did not illustrate economic points because of the quality, or discipline, of the guide:-

> "Unfortunately the guides were not well informed on economic issues", or
>
> "The only interesting thing was the product that they made, not the economic factors that were involved".

Thus the two were inseparably entwined: the guides illustrated the economic points by what they said and what they pointed out. This showed that the students were indeed looking for economic illustrations and not just for matters of general interest, but it also showed that they relied heavily on the oral aspect of the visit rather than testing economic theory for themselves. However, some students did go some way to solving the problem of a seemingly poor guide by becoming adept at phrasing questions in order to gain the information they required. This was pointed out by one interviewee who said:-

> "You can't come out with economic theory, they don't know what you're on about, it has to come out in the conversation".

In this instance, perhaps a social lesson has been learnt.

However, some students did evaluate a visit solely by its production process, or lack of it:-

> "The were just making components and we did not see the finished product at all", and
>
> "Because it was capital intensive".

were two comments from students in evaluating what was for them the worst visit. Nevertheless, seeing a production process was regarded as an important part of the visit, since students often

stated that the poorest visits were ones that had not included such an event, such as those to government agencies. This was partly due to the limited aspect of the talk given, as illustrated by:-

> "Lack of economics. This only gave us an idea of Wales in general and explained their administration", and
>
> "(They) talked more on the general background and history of Wales rather than relating it to economics".

Clearly the students were expecting to be 'fed' economics all the time and if the principles were in a rather disguised form, either on a factory visit, or in a talk, they were hard to perceive.

The students evaluated the course as a whole and even more so each visit by relating it quite firmly to economic factors. If these were not apparent, the visit was rejected and presumably if they had not been in evidence at all, the whole course would have been rejected. Fortunately this was not the case. Other factors did colour their view, particularly the quality of the speaker in illustrating economic points of interest when answering questions, but also the production process; while this was not seen as being very important, the opportunity to view what was to be referred to and place the economic theory in a practical context was seen as valuable. Perhaps the emphasis on economic aspects was partly due to consolidation of the points by teachers at the evening meeting, but this too was part of the course.

In conclusion, it can be stated that the students were able to distinguish the economic aspects of the visits from the production process and they evaluated the course with reference to the economics that was illustrated. However, it is pleasing to note that they were able to do this and enjoy themselves at the same time.

ECONOMICS AND REALITY

Having established the fact that the students were able to distinguish the economic information available to them on the field course, and indeed that they judged each visit largely by this criterion, it should be possible to determine their view as to whether they considered economic theory to be used by the firms they visited. This factor could have an influence on their view of economics as a subject, for if they considered it to be used, this would take it out of the realm of a theoretical discipline into that of a useful and used set of principles, and as such might be seen in a more positive light.

a) Economics in Industry

Given that students had probably not been inside many factories nor spoken to many managers about economic matters, they took with them their preconceived ideas formed outside the classroom and more specifically inside economics lessons. While it is accepted that

many admitted to not knowing whether economics was used in business, the balance was certainly in favour of the subject information being used in some form, prior to the course. Such a belief was strengthened after attending the course and this can be contrasted with the unchanged beliefs of those who did not attend, as shown by the responses to the EAS. Table 12 shows the t-statistic for the difference between the means for the group named between the pre- and post-course measure of student views.

TABLE 12 : ATTITUDE TO THE USEFULNESS OF ECONOMICS IN INDUSTRY

19. "Businessmen use economic theory in day-to-day decisions".

	SCHOOL A		SCHOOL B	
	ATTENDERS	NON-ATTENDERS	ATTENDERS	NON-ATTENDERS
t	0.77	0.47	0.941	0.457

A positive t-statistic indicates that student opinion as a whole for that group has moved to a smaller value, i.e. towards agreeing with the statement quoted, and a negative statistic shows a movement to a larger value, i.e. towards disagreeing with the tatement. Neither of the groups attending the field course showed a statistically significant shift of opinion, thus any differences were likely to be a result of chance.

Despite this being a rather crude measure of student opinion and indeed giving no significant answers, the EFCS-S provides more evidence. In response to Question 8a (see Fig. 2), 58% of those who attended the course in School A and 35% in School B stated that their opinion had changed as to whether economics was used in industry. (For a full set of statistics based on the replies to the factual questions asked on the EFCS-S, see Appendix 3). Such a reply could indicate either a positive or negative movement of opinion. Further investigation showed that both shifts were evident. The replies to the questions were classified into three groups of opinion: those that thought that economic theory was used by industry more that they had expected; those that thought it used less; and those that thought it used it in a different way.

TABLE 15: OPINION OF ECONOMICS AS USED IN INDUSTRY

ECONOMIC THEORY IN INDUSTRY IS USED:	SCHOOL A	SCHOOL B	TOTAL
n	24	40	64
More than expected	7	7	14
Less than expected	3	5	8
In a different way	4	3	7
Total comments	14	15	29

While the balance of opinions was slightly towards the greater use of economic theory in industry, with comments such as:-

> "I didn't previously realise how closely management related to economics in making their decisions",

there were several comments like:-

> "Economic theory does not seem to be directly related to industry".

However, in this second statement there are hints of a more sophisticated appreciation of the situation in that economic theory is evident, but not "directly". This line of argument can be followed in various student replies that fall into the third category:-

> "It is used in an indirect sort of way and is hard to define",
>
> "It does not seem to be used day to day, but in the long run it is used more than management realise",
>
> "Yes, it proves that a lot of economic decisions are based on experience with some emphasis on economic theory".

Perhaps the truth of the matter is that many management decisions are based on experience, but behind them there are economic influences of a macro and micro nature. The breakdown of *ceteris paribus* in practice was to some students alarming, but it is none the less a reality, and the fact that "outside factors" enter into the question is a valuable lesson. This idea was taken further by one interviewee

with reference to the specific issue of elasticity of demand being investigated:-

> "They didn't use it at all, they didn't know how much of their product they'd lose if they put the price up. They suggested that it wouldn't affect them too much because they were a brand leader, but they said that if they increased the price by 2p or something, the big stores might go elsewhere".

This showed not only an appreciation of how to gain information relevant to economics from the company, by posing a question in concrete terms, but the reply was accepted for what it was and reapplied to economic theory, showing that an established brand would face a more inelastic demand curve than an unbranded product. Unfortunately not all students are able to appreciate this type of reasoning while on a visit.

Besides economics being used by companies, the general state of the British economy affects them. This was all too apparent with redundancies and closures together with mention of inflation, exchange rates, interest rates and taxation in almost every factory. It would have had to be a very dull student not to realise that such factors were important to a firm.

Thus economic theory was accepted by many, though not all, as being relevant to industry. However, it is interesting to note the student response to the question whether they considered managers would benefit from studying economics - both groups thought this would be a good thing:-

TABLE 14 : ATTITUDE TO THE USEFULNESS OF ECONOMICS TO MANAGERS

7. "Managers would find it useful to take two weeks off work to follow an economics course".

	SCHOOL A		SCHOOL B	
	ATTENDERS	NON-ATTENDERS	ATTENDERS	NON-ATTENDERS
t	2.626**	0.16	1.95*	0.63

Using the two tailed t-test for the difference between two means, the group of students who attended the course showed that there was only a 0.05 chance in School A and a 0.1 chance in School B that their opinion was drawn from the same sample, thus it can be concluded that

their opinion had changed in favour of managers attending an economics course. This could have been because the students thought that economics was in some way relevant to British industry and that managers should know of its implications, that managers were ignorant of economics (or economic jargon) and should be better informed, or that they were simply surprised by the managers not being able to answer their questions on theoretical matters and thought that they should be able to do so. Whatever the reason, economics was seen as potentially relevant to management.

b Economics in Government

The students had studied the influence the government may have on British industry. This can be either on the macro level, such as interest rates and taxation, or on the more specific level of regional policy and price support. While nationalised industries were visited by most groups, both courses concentrated on private companies, and it would be in this area that student opinion focussed. While many student comments were general, some did comment on the ability of government to control industry, with the balance of opinion being that government was less powerful than expected. However, the small number of comments must be noted, with 58% in School A and 75% in School B stating that their opinion had not changed (see Appendix 2).

TABLE 15 : REACTION TO GOVERNMENT INFLUENCE OVER INDUSTRY

GOVERNMENT POWER OVER INDUSTRY BEING:	SCHOOL A	SCHOOL B	TOTAL
n	24	40	64
Less than expected	5	6	11
Greater than expected	2	3	5
Total comments	7	9	16

As may be expected from a field course centred on an area so different from that of the student's own home, government influence on the economy was expressed largely in terms of aid to industry. The opinion stated by the student depended on his opinion before the field course, but the more common view was well expressed in the comment:-

> "Government aid is a very important factor in that many companies would have closed down without aid",

or more positively,

> "The large firms that have been attracted to South Wales and the large number of new factories would not have happened without aid".

However, the same evidence was seen from a different viewpoint by another student:-

> "They aren't as generous and as strong as they make themselves out to be, because for many firms the incentives didn't attract them",

or alternatively an admission that the government is not all-powerful,

> "It is not that easy - there is more influence on things like the optimism of separate firms",

to the more depressing,

> "It may be impossible for the government to help depressed areas".

In Sheffield, almost inevitably, the local council was referred to as an influence on the local economy. In the light of the refusal by the town to have an enterprise zone sited within its boundaries, preferring to instigate its own aid programme, the following comment was an appreciation and interpretation of the fact:-

> "The (central) government has less power than I thought. Local authorities seem to have a bigger influence".

Thus a more realistic appreciation of the influence of government on the economy may have come about after being presented with the evidence of the field course. This understanding was shown by the interviewee who stated:-

> "(The government) tried to organise factories, but nobody wanted to go there. They've got the cash to put into the economy, but no one's optimistic, so they don't go. I don't think they can affect things much".

However, on a more limited scale it was more common for the students to admit that individual firms were affected by government action, either deliberately or by accident. Grants, subsidies and even privatisation were government policy and so affected individual companies.

As one interviewee stated:-

> "The government can affect firms quite a lot. It made me more aware of this. The government affected Newport Docks because they are no longer nationalised and that exchange rates affect exports and imports and government cuts are going to affect the Welsh Development Agency funds, which is going to have a knock-on effect with less grants to industry".

An alternative to the government influencing the economy is to investigate the extent to which the government and its agencies use economic theory. Unfortunately the relevant statements posed on the EAS were not faultless and thus the evidence, such as it is, should be treated carefully. In addition, not all students heard talks by government officials, nevertheless all saw the effects of government policy in the region visited and heard about it from the point of view of the private company. Of course the latter may well not have been in agreement with the former. Two statements were aimed at discovering whether the student considered that the government planned the economy and made its decisions by reference to economic factors and in both cases there was a shift of opinion by those students who attended the field course away from this view. It could be argued that this was the only direction opinion could move, given the initial reaction to statement, but this must be contrasted with the stable, and similarly biased opinion of those who did not attend. This movement could be partly linked with the fact that the students saw the government having less influence on the economy in general and on the actions of firms in particular, but it is more likely to stem from a belief that economics is not the only, and probably not the most, important influence on government thinking; social and political considerations are also evident.

TABLE 16 : ATTITUDE TO THE GOVERNMENT'S USE OF ECONOMICS

13. "The main considerations in government planning are economic".

22. "Decisions taken by the Chancellor of the Exchequer are made mainly on economic grounds".

	SCHOOL A		SCHOOL B	
	ATTENDERS	NON-ATTENDERS	ATTENDERS	NON-ATTENDERS
(13) t	-2.792**	0.232	-0.772	0
(22) t	-3.68***	-0.236	-2.082	-0.199

As can be seen there was a shift of opinion to "disagree" with both these statements by both groups of attenders. Indeed those from School A, who were involved in a greater amount of direct influence by government departments, showed that their opinion changed with there being only a 1% chance in response to Question 13 that this change was due to random factors. This change was less marked with the students of School B, but nevertheless their opinions moved in the same direction, to a highly significant degree in the second question.

had been presented with more detailed information from a number of sources, and while some of it may have been scepticism on the part of managers, they have concluded that economics is not so important to the government, certainly on a micro level, as they previously thought it to be. This would contrast with the emphasis placed on government management of the economy in the 'A' level course; perhaps a valuable counter-balance.

Given this more sceptical appreciation of the government's role in the economy, it was interesting to note how student opinion changed with reference to what the government should do to assist the economy as a whole and the depressed areas in particular. Here the experiences of the students in visiting two different areas showed itself clearly. Those who visited South Wales were presented with the fact that the government was already doing much to help and it was implied that by the number of new, unused factories, it had almost spent too much money. Those who visited South Yorkshire, and particularly Sheffield, were shown, in many ways, an equally bleak scene, but one where only very limited government assistance was available. This difference showed itself clearly in the views of the students; those in School A shifting, if anything, away from government aid to depressed areas, while School B moved strongly in favour of the assistance.

TABLE 17 : ATTITUDE TO GOVERNMENT AID TO DEPRESSED REGIONS

3. "Government assistance to depressed areas should be raised by reducing other subsidies to industry".

	SCHOOL A		SCHOOL B	
	ATTENDERS	NON-ATTENDERS	ATTENDERS	NON-ATTENDERS
t	-0.285	-0.353	1.694*	0.181

As can be seen, the students who attended the course from School B showed at the 0.1 level of significance that they were not drawn from the same sample of opinion after the course as prior to it and hence it must be assumed that their opinion changed. This is further illustrated by the replies to the EFCS-S where 67% of students from School B were in favour of more money being given to the area by the government, compared with only 37% from School A (see Appendix 2).

Such a contrast among the students could have been due to a change in political beliefs between the first and second EAS, but this cannot be substantiated when compared with their opinion of the general level of government spending. In fact the complete reverse was evident. While students at School A were against further spending in depressed areas, they were in favour of increased government spending in general. This, if anything, was reversed in School B who, while being in favour of more spending in depressed areas (and presumably Sheffield in particular), were not in favour of more government spending in general, possibly due to the cost involved.

TABLE 18 : ATTITUDE TO GOVERNMENT SPENDING

14. "The government should raise the level of its spending".

	SCHOOL A		SCHOOL B	
	ATTENDERS	NON-ATTENDERS	ATTENDERS	NON-ATTENDERS
t	2.299**	-1.245	-0.47	-0.339

Students from School A showed a shift of opinion, identified at the 0.05 level of significance in favour of more government spending.

These changes of opinion, which were not identifiable among those who did not attend the course, show a danger associated with the activity; that of presenting only a limited view of the evidence available. Ideally all students would have heard of the experiences in South Wales and South Yorkshire and from other regions for that matter, and compared them, reaching their own conclusion. This was not possible and so they were presented with only part of the picture. It may be argued that some view of reality is better than none and that in time the other side will present itself, but there is a danger of generalising from specific instances as a result of the course.

This point was further emphasised with the suggestions from the students as to which policies should be used to reduce regional unemployment. These were many and varied, but were probably similar to the views expressed by people to the students on the course.

TABLE 19 : OPINIONS OF METHODS OF GIVING AID TO DEPRESSED REGIONS

GOVERNMENT ASSISTANCE TO INDUSTRY:	SCHOOL A	SCHOOL B
n	24	40
Subsidies/Grants	4	14
Reducing rates	-	5
Enlarging development areas	-	4
Creating enterprise zones	-	3
Aid to most depressed areas	2	-
Improving local infra-structure	1	2
Others	2	8
Total comments	9	36

It is to be noted that some students named more than one policy as being in their view effective, but few gave any detailed reasoning behind their suggestion; indeed this was not requested. Nevertheless, the differences were clear: government aid should be given to the worst afflicted areas according to those who had been to Wales. The aid should be spread more thinly, according to those who had visited Sheffield. The suggestions of enterprise zones and rate reductions only stemmed from the South Yorkshire group. However, there were some similarities, particularly in the rather vague area of subsidies and grants. A wide range of suggestions were made by individual students, classified as "others"; these ranged from "raising wages", "increasing local decision making powers", to "reducing corporation tax" and are too numerous and varied to comment upon.

This further emphasised the problem of different student experiences producing different views.

ECONOMICS AS A SUBJECT

It has already been shown that the students taking part in field courses were aware that economics was identifiable in the companies they visited, and although there was some disagreement as to whether industry used economics in practice, certainly economic theory was illustrated by the firms visited. This did not, however, show

itself in student opinion of whether economics was seen as practical or its ideas used in the real world, as identified in the EAS. This could be partly due to the existing bias in the statement, in that most students agreed with it prior to attending the course, so allowing very little scope for a movement of opinion in the direction of greater agreement. Indeed the results from the two schools are somewhat contradictory and in no case are any changes of statistical significance.

The same reasoning cannot be suggested for how students saw economics as personally useful, for in the initial surveys there had been a wide range of opinion expressed. However, the groups' opinions after attending the field course did not significantly differ from those they held before attending, and they were not at variance with those who did not attend. Consequently the only conclusion that could be drawn was that the course did not significantly affect students' opinion of how they used economics. This is not unduly surprising, as the field course illustrated economic concepts with an emphasis on the firm or government rather than the individual.

This same fact can be related to the student's opinion of economics as being helpful in gaining employment. Again the statements were at fault for providing a large proportion of "agree" replies, but there was no statistically significant shift in student opinion as to whether studying the subject would help the candidate in gaining employment, nor whether employers viewed it as a beneficial subject to have taken. Probably this matter did not arise, as employment prospects for even 'A' level economists in South Yorkshire or South Wales were not the same as for those in the south-east, and so any comments on academic work can be general and kept to a minimum, allowing the focus of interest to be economics.

It can be concluded that the field course impinged little on the groups' personal views of economics, which in no statistical sense, as measured by the EAS, differed from their views prior to experiencing the course.

GENERAL EDUCATIONAL INPUT

It has been claimed that whatever the effect of a field course on economic understanding, there is an educational input of a general nature: the experience of visiting a factory; visiting a contrasting area; meeting adults who are not teachers and hearing their point of view.

a) Life Inside a Factory

The general education input of the course concentrated on industry of which it can be assumed the student had little experience, though possibly preconceived ideas. Seventy five per cent of students in School A and 72.5% in School B admitted to being surprised at what they found inside a factory (see Appendix 2). Supporting evidence for this change in attitude was concentration on physical factors such as conditions of work, the type of jobs being done, or the sheer size of the operation.

Thus it was difficult to conclude whether students changed their opinion on how hard people worked in industry. This depended to such a great extent on the type of job and the type of industry. However, the students on the whole thought that there was less activity in most factories than they expected. This is an obvious danger of taking a 'snapshot' of a place of work and doubtless this opinion would be changed if they were to work in the factory. Indeed, inconsistencies are apparent, as one interviewee exemplified in talking of different visits:-

> "The labour force in a lot of places didn't seem to be doing much, everybody sitting around watching the machines not doing a thing, then once an hour they had to do something with the machine ... some of the jobs were pretty boring. They all seemed to be working hard".

Generalisations are dangerous and this is a problem for field courses. Students tend to generalise from specific instances. It was hoped to give them a wide range of industries to compare, but a predominant impression was inevitable. It was hoped that the student would place the whole experience in perspective, and certainly have a more complete background knowledge of factory life into which to place new events.

In the light of the above comments, it is not surprising that a general question as to whether workers in factories worked hard did not show any clear answer. Those students who visited South Wales shifted opinion towards thinking that people could get away with doing little, while those who went to South Yorkshire expressed the opposite viewpoint. However, neither of these shifts of opinion were statistically significant, with changes perhaps cancelling out each other. Nevertheless industry did make sufficient impression on the students for almost all of them to comment upon it. Perhaps their surprise when actually visiting a factory was largely due to their preconceived ideas about what they were like.

b) Manufacturing Industry

Much of the field courses concentrated on manufacturing industry, a career in which only 15% of the students would actively consider prior to the course (see Appendix 2), which to some extent reflected the employment opportunities in their own area. While more than 40% stated that their opinion of such industry had changed, no clear indication of how this had taken place was given by the replies, many of which were repetitions of statements already quoted as to life inside a factory and others were pertaining to labour relations referred to below. However, there was probably a greater appreciation of manufacturing industry as a result of the course, even if it may have disenchanted more than it contrived to attract. Students' impressions may be illustrated by the following random, though relevant comments:-

TABLE 20: IMPRESSIONS OF FACTORY LIFE

CAUSE	SCHOOL A	SCHOOL B	TOTAL
n	24	40	64
Monotony of work	7	8	15
Physical conditions	3	11	14
Effort of workers	7	4	11
Size of plant	4	7	11
Manager/Worker relations	2	3	5
Other	0	3	3
Total comments	23	36	59

It must be noted that some students expressed more than one comment and hence biased the figures on the table. However, a distinction must be made once again between the experiences of the two groups. School A visited largely new, expanding firms, often in the electronics sector, while School B concentrated on older, possibly declining industries such as steel making and using. Hence, when conditions were mentioned, the heat, noise and safety factors were overwhelming in School B, while the impression of cleaner conditions than expecte were apparent with the group that visited Wales. Thus the comments by the students can be compared:-

> "The unbelievable noise and heat", and
>
> "The filth and age of the capital being used", and
>
> "It was cleaner than I expected, even the boilers".

Clearly it depended on which company the student was considering at the time of completing the questionnaire, for all of them visited both old and new firms, but the balance was as already outlined. However, when pressed to think more carefully, one interviewee went further than an initial reaction:-

> "The idea of a factory to me was an untidy and disorganised place, when you look into it you see it and it looks like that, but when you are shown round there is a system to it. It is surprising how efficient industries are and I thought they were just dirty, dingy buildings on the outside".

This further illustrates the worthwhile nature of a tour of the factory before discussing the economic issues.

The size of some of the plants and the amount of capital employed were commented upon by students. But the most often mentioned factor was the type of work being done. This usually referred to workers on a production line which was inevitably seen as:-

> "The tedious, monotonous production line work was worse than I thought".

"They employ a lot more people than I thought ",

"Many of the jobs were more skilled than I had realised", and

"It was far more organised than I thought before",

to the more general,

"It has given me a greater awareness of what's happening in industry",

or the more melodramatic,

"I won't take cutlery for granted any more".

c) Management and Labour Relations

A student's appreciation of manufacturing industry is likely to be superficial if it depends just on what he sees taking place on the factory floor. Any deeper insights had to depend on the people who acted as guides and answered specific questions. Here potential misinformation and opinion were difficult for the student to identify, especially in areas where he had no ready established point of reference to relate the information. Inevitably managers painted a rosy picture of their company and its relations with the market, labour, community, etc. It was to be expected that they regarded their product quality as high and their industrial relations as good. Such impressions were very one-sided, as only one group met a representative from the trade union movement, and even she was outnumbered three to one by management representatives.

Perhaps this danger is exaggerated, for neither group significantly changed their opinion about British management, indeed it was one of the smallest movements recorded in answer to the EAS by School A and any change there was in School B tended to be against the practices of British managers being sound. The students may have been aware of managers over-emphasising their case, as one interviewee stated:-

"They were all plugging their firms, that's what they're there for. I suppose they were conning us a bit, but you can see through people to a certain extent",

and perhaps more reflectively,

"It's the same with all of them, it's difficult to say if they're conning you or not. Very difficult to judge, especially if they are experienced at conning people".

However, the students were far less likely to be sceptical when 'evidence' was presented and 'reasons' given, however valid in fact:-

"They told us the evidence: no strike for ten years, so that's pretty good. They said it was because the foremen and the workers came from the same place, so it sounds as though they have got it right".

This presents a danger which is best illustrated by industrial relations, where the students often have preconceived ideas, generally gleaned from the media and parents. This often contrasts starkly with the evidence they were given by managers, who tended to forget the last dispute, or put it further in the past. Probably this balance is necessary and may even be desirable, but it was one area in which a change of student attitude could be expected.

TABLE 21: ATTITUDE TO INDUSTRIAL RELATIONS

20. "Trade unions and management usually co-operate"

15. "Strikes are common in British factories"

	SCHOOL A		SCHOOL B	
	ATTENDERS	NON-ATTENDERS	ATTENDERS	NON-ATTENDERS
(20) t	2.488**	0.222	0.814	-0.165
(15) t	-2.111***	-0.151	-1.839*	-0.754

As can be seen from Table 21, both groups of attenders had a more positive attitude to industrial relations, believing that unions and managers usually co-operated, after the field course. Although this was not statistically significant in School B, it did contrast with those who did not attend, while in School A there was only a 0.05 chance that the sample was taken from the same group before and after the course, thus indicating a probable change of opinion. In response to the more factual statement concerning strikes, both groups indicated that they believed them not to be so common as before they attended the field course, there being a small chance of this change of opinion being due to random factors.

Such statistical evidence was supported by the EFCS-S, in which over 50% in both schools stated that their attitude to industrial relations had changed as a result of the course (see Appendix 2). Their reasoning was overwhelmingly that there was more co-operation than expected:-

TABLE 22: VIEWS OF CO-OPERATION IN INDUSTRIAL RELATIONS

INDUSTRIAL RELATIONS ARE:	SCHOOL A	SCHOOL B	TOTAL
n	24	40	64
Better than expected	10	17	27
Worse than expected	2	3	5
Total comments	12	20	32

Such opinions were supported in most cases with evidence quoted from managers met on the field course. The conclusions could be quite simple, such as:-

> "I realise now that industrial relations are quite good in most places", and
>
> "Better than portrayed in the media - changed my attitude",

while others showed some appreciation of why industrial relations are regarded as bad:

> "Better than you think, you only hear about strikes, you never hear about the many problems that are solved", or
>
> "It seems much greater attempts of co-operation are made before strikes are used".

Such a generalisation can be related to just one visit:-

> "... especially at Matsushita where even the management worked on the shop floor sometimes".

Although this was the usual line of thought, dissenting voices were heard:-

> "Less discussion between unions and management than I thought", and
>
> "I didn't know shopfloor workers resented change so much!"

Perhaps the voices of various managers can be heard in these condemning statements as much as in the flattering ones. However, the student had been presented with evidence of industrial relations in Britain, much of it valid, and had assimilated this, changing his opinion of the outcome to a significant extent.

d) Trade Unions

The more co-operative nature of industrial relations, as viewed by the students, did not show itself in changing attitudes to trade unionism (see Table 23) and to this extent it was unfortunate that most students did not meet any representative from this side of industry. So management was often seen as being responsible for the better than expected co-operation and for the fact that unions in their particular factory were no problem. As shown by the responses to the EAS, this did not develop into a situation where the students believed that trade unions should have more power, although the shift, such as it was, was in this direction, and more marked in School A than School B. However, this can be partly explained by the extreme position taken by students in School A in the first survey and really there was little evidence of either of the courses significantly changing such entrenched opinion.

TABLE 23: ATTITUDES TO TRADE UNIONS

11. "Trade unions have too much power in the economy"

5. "The government should control the power of the trade unions by legislation"

	SCHOOL A		SCHOOL B	
	ATTENDERS	NON-ATTENDERS	ATTENDERS	NON-ATTENDERS
(11) t	-1.478	-0.165	-0.258	0.181
(5) t	0.873	-0.61	0.26	-0.546

e) British Industry

There is little evidence that students saw British industry as a whole in a more positive light, as a result of the field course. Indeed they tended to disagree that the future of the country and private industry were inextricably entwined. There was no significant change of opinion by any of the groups - opinion remained very much divided and hence it is fair to conclude unaffected in any measurable sense by the field course.

Students entered factories with preconceived ideas based on little evidence, largely gained from the media. Although many things surprised them about the working environment, these are difficult to categorise except the factor of working conditions. Nevertheless their impressions were significant insofar as it was these factors that students were most willing to talk about, both during the field course and afterwards. There was the danger of seeing industry at work, but only hearing management's view of it. However the students seemed to be aware of outlandish claims and questioned representatives most closely on the issues in which they were interested. Though they admitted they might have been "conned", they were at least aware of the danger. Only on the matter of industrial relations did attitudes specifically shift. This could be seen as a positive outcome of the field course, one area in which prejudices were at least diminished, while in most instances attitudes did not vary very much. However, it should not be inferred that an individual's attitude did not change as a result of the experience, since it might be that the instruments used were defective in registering such changes. Perhaps more realistically, there is evidence to suggest that students thought about the implications of their views, having been presented with more evidence during the course.

THE REGIONS

It has already been noted that only 9 students out of the 64 who completed the questionnaire had previously visited the area in which their field course took place; of the remainder almost half admitted that it was different from what they had expected (see Appendix 2). This would tend to suggest that they took with them preconceived ideas of what the area would be like. However, there is no reason why the two groups should have had the same preconceptions about the two different areas, so their comments are left separate. Many comments focussed on the industrial conditions they found, for after all this was an economics field course, but others concentrated on a general impression of the area. The views were divided between those who found the area more depressed than they had expected, possibly contrasting the region with the south-east, and those who perhaps had had a black picture in their minds and thought there was more cause for optimism.

TABLE 24: EXPECTATION AND REALITY OF DIFFERENT REGIONS

THE WAY IN WHICH THE AREA DIFFERED FROM EXPECTATIONS:		NUMBER
South Yorkshire:		
	More depressed	11
	Less depressed	3
	Cleaner /More modern	3
South Wales:		
	More depressed	6
	More/Newer industry	4
	Less depressed	2

Perhaps images of Sheffield were more positive before visiting the city, but this town in particular caused surprise:-

> "It did not differ in all parts, but Sheffield seemd to be so derelict it was hard to believe", and
>
> "... due to its large areas of unused building and factories".

These were representative of the majority of responses and while there was favourable comment on other areas of the city, and particularly the centre, it was the images left by the Don Valley that made their mark on the students:-

> "Some areas were quite modern and clean, but it was also more run-down than I expected".

It was undoubtedly the visual image that made the greatest impact on the students, but this can be contrasted with the people they met on the visits:-

> "It was more depressed with closed-down industries, but the people were more optimistic than I had been led to believe".

Parts of Sheffield may have been a shock to many students, but the Valleys of South Wales have been portrayed as an area of depression for many years, and consequently it may be expected that the students who visited them were better prepared. Opinion was divided on the area, but probably the most overwhelming feeling was one of contrast between the coastal belt and the Valleys themselves, as one interviewee expressed it:-

> "A stark contrast between terraced houses half way up the valley and industrial decline and Cardiff which was a nice place, a kind of mini-London - nice and tidy as well".

Students also contrasted the heads of the Valleys and the industrial areas. However, it was the cumulative impact of minor observations that was most significant:-

> "The condition of the houses and cars and general look of dullness about the place", and
>
> "I expected the quality of the area to be better, ie. I didn't realise the poor quality of housing, roads, etc.".

However, for some students their expectations of Wales were quite different, and they returned rather more optimistic about the area:-

> "I imagined a large dirty area of pits and steel works",
>
> or even more generally,
>
> "There was more industry than I expected, even though some were facing financial difficulties".

If an aim of the course was to introduce students to a contrasting area of the country, both field courses achieved this, with almost half the students willing to admit that it had changed their view of the region. Although a field course can only give a limited view in the time available, the students do stay in a hostel there, meet many local people both on visits to companies and in their free time, and start to gain some impression of the area based on some kind of evidence. This view may be prejudiced and biased, but at least it is closer to the truth than before they went.

4. FIELD COURSES IN GREAT BRITAIN

In addition to investigating the effects of an economics field course in some detail, an attempt was made to discover the extent and diversity of such courses in the country, by contacting as many teachers as possible who organised what they considered to be economics field courses. Personal contacts and the branch system within the Economics Association were used, with letters being written to each branch secretary requesting information, and a note was entered in the Association's publication Economics. From initial contacts, other names were suggested, until eventually twenty-six replies were received. This is not a representative sample of teachers organising field courses, for those who are not members of the Economics Association probably did not hear of the enquiry, and there was a distinct regional bias due to one contact often suggesting a number of other teachers who he knew had organised courses. In such cases it may be fair to assume there was a similarity of approach, as the teachers knew each other. The regional bias is well illustrated by the over-representation of the South-East, South Wales and West Yorkshire, while not a single reply was received from Scotland, the North-East or the Midlands.

Each teacher contacted was sent a copy of the Economics Field Course Survey - Teachers (EFCS-T) to complete and return. Of the twenty-six replies, three were from teachers who had organised courses in the past, but no longer did so. In all cases this was due to their promotion into a post where they were no longer responsible for organising the economics department within their school, and consequently they only completed the second part of the survey. Otherwise all the replies were from teachers who currently organised field courses in their school, some enclosing a copy of their previous year's programme. The responses indicated a wealth of experience of running field courses, the mean number of courses having been organised by each teacher being 7, with a range of 2 to 15 (see Appendix 3a). However, not all the replies fell into the definition of an economics field course as used so far in this study. Four replies were from teachers who organised one-day visits to local industries or areas, but did not stay away from the home base. While this may be very valuable and may reap many of the benefits suggested for a field course, such visits clearly cannot be regarded as a course in themselves, but we shall return to this issue later. One reply described a three-day experience of business simulations, which did not involve experiencing industry at first hand. The only overseas course will be treated separately, as will the visit to London, as their aims were slightly different from pure industrial economics field courses, between which comparisons can more readily be made.

Of the sixteen field courses in the bulk of the survey, it was worthy of note that all were organised to the north or west of the home base, all in areas of higher unemployment. This feature even extended to schools in Yorkshire and Lancashire and thus, due to the distances travelled, almost all courses were for four or five days and all for 'A' level students (see Appendix 3a). Consequently the concentration was on the traditional manufacturing industries, although it would be wrong to say that that was all the students experienced, as variety was also apparent. Two schools had launched

joint ventures with schools in another area, though in both cases this had been done after considerable experience and due to personal contacts with teachers at the other school. Indeed there would seem to be a certain camaraderie among economics teachers who organise such courses, with the same names being suggested from a number of sources, although a distorted picture may have been given by the methods used by this survey. However, there can still be detected the influence of the late Brian Robinson in the venues and even companies being visited today that were suggested in his book nine years ago. Perhaps this influence accounts for the similarity of many courses and indeed the organisational structure that was typical of most courses, including the two considered in more detail.

ACTIVITIES ON FIELD COURSES

It proved very difficult to draw together the activities on a field course into any meaningful sub-divisions as the visit depended greatly on the region being visited. However it would be fair to say that the two case-study schools conducted their field courses much more in the private manufacturing sector than the remainder, which devoted a greater proportion of their time to lectures and surveys. It must be noted that, while this was the impression from the replies, many teachers pointed out that they had stated the mix during the last course and this may have been rather different in previous years (see Appendix 3b).

Two interesting diversions from the case studies commented upon so far were the number of lectures and surveys conducted by the students. Although information is very incomplete about what exactly occurred on these events, it is worth outlining the subject matter considered. In all, twenty-eight subjects were mentioned for lectures, often by local or regional government economists, academics or trade unionists. The descriptions specified are in no way complete, but Table 25 indicates to some extent the range of topics covered. It is to be noted that many made the effort to present to the students the 'other' side of industry, with talks from trade unionists, a deficiency revealed in the two case studies.

TABLE 25: SUBJECTS OF LECTURES ON FIELD COURSES

SUBJECT	NUMBER
Local/regional problems	8
Trade Unions	6
Academic economic subjects	4
Role of central/regional economic planning	3
Work of a specific QUANGO	3
Management techniques	1
Economic history of area	1
Co-operative movement	1
New towns	1
Total 49	28

Similarly there were no surveys conducted on the two field courses discussed in detail. This is rather untypical, as nine of the schools did conduct some kind of first-hand research, although the quality of the survey and even its methods were impossible to judge. This activity was in at least four cases confined to the weekend, when it is almost impossible to gain visits to companies, and it is interesting to note that developing survey skills was not seen as a major objective of the course. This is not to say that the results were not used to reinforce the points they substantiated. By far the most popular study was of the labour market, presumably considering such issues at labour mobility, employment patterns and unemployment. Certainly any evidence other than purely factual information would be difficult to obtain with any degree of certainty, but this in itself is a valuable lesson for the students. In addition such surveys bring the students into contact with the local community, and though they are still outsiders looking in, they are at least more within the local situation than seeing it from a minibus or from a walk round the shop floor. The other major area for surveys was land use, with particular reference to retailing. While much of this kind of activity, if it has any value, may be done at home, presumably the motivation behind such a survey was to compare the home area with that being visited, although detailed comparison without local knowledge would be difficult. A final survey combined the two already discussed, with an investigation of an enterprise zone. This may be closer to original economic research, if information can be gained easily by students, for as yet there are no firm conclusions as to the effects of such areas on local industrial location patterns and subjective interpretation can be kept to a minimum while gathering evidence.

TABLE 26: SUBJECTS OF SURVEYS ON FIELD COURSES

SUBJECT	NUMBER
Employment issues	6
Land use	2
Enterprise zones	1
Total	9

PERCEIVED BENEFITS OF FIELD COURSES

The problem with presenting teachers who organise field courses with a list of possible benefits of such field courses is that they tend to agree with everything. This is not surprising, as they have on the whole conducted such courses for a number of years and could hardly be expected to condemn them as worthless, as they devote so much energy to their organisation. Thus it is the strength of opinion that is most worthy of note, and also the answer to question 10b on the EFCS-T that may indicate some strength of opinion as to the main reason for organising such a course.

The strongest conclusion from the teachers' replies was that they saw the benefits of such a course as being closely related to the economic content, a point stressed throughout (see Appendix 4). "Seeing the relevance of economic theory" and "Testing economic theories against reality" gained the most support and can also be said to be the two categories that were most closely akin to improving the student's perception of economics. In addition motivation and gaining up-to-date information and examples were extremely well supported aims, whereas more vague ideas of meeting adults, gaining survey skills and career implications were not seen as the major purpose of an economics field course. This is not to say that the teachers did not value the wider benefits of the course, but they seemed to keep their aims closer to economic content, with life inside a workplace and seeing another area of the country ranking highly. It is pleasing to note that the staff as well as the pupils saw enjoyment of the course as important and teachers may well have seen this as a means of improving relations with pupils. Finally it is important to note that teachers themselves gained from the course. Indeed no respondent thought this to be an irrelevant aspect.

The reasons the teachers themselves adduced for the success of their course only served to support this evidence, for the most frequently given justifications were those of increased student motivation or interest in the subject and the fact that the students saw the relevance of economics, although one teacher did state that motivation was an irrelevant aspect of the field course. Besides these it was the wider aims that were quoted such as "broadening horizons" or "getting to know the students better". Some teachers gave more than one reason, hence the number of replies shown.

TABLE 27: TEACHER REASONS FOR THE SUCCESS OF FIELD COURSES

REASON	NUMBER
Increased interest in the subject	6
Relevance of economics being presented	5
Improved teacher-pupil relations	3
Increased understanding of economics	2
Gaining examples	2
Broadening horizons	2
Report writing skills	2
Practice in questioning adults	1
Total	23

As can be seen from Table 27, a few teachers noted the new skills that were developed in report writing and questioning adults in different surroundings. However, most justifications fell into the categories already discussed, with the emphasis on specific economic understanding rather than vaguer, general judgements.

A final source of information was the invitation for teachers to add any additional benefits that they saw a field course as providing. There were only eight such replies, which may reflect the complete nature of the list provided or the unwillingness of the correspondents to spend more time on the survey. However, only two items were presented by more than one teacher, those of "getting the pupils away from home and parents" and that the course enabled to students "to see events in economic terms". Surely this last point is the whole aim of economics education and if fulfilled a justification in itself for a field course. Other replies mentioned teamwork in surveys, and one teacher, who held a joint course with another school, regarded the interchange of ideas between students as valuable.

As may be expected, all the teachers deemed the course a success. After all, it was not their first experience, and all proposed to conduct a similar venture next year, except where their personal circumstances had changed. Thus it can be concluded that for this sample of economics teachers, although very small, field courses in their opinion did fulfil many of the aims that have been suggested, with the emphasis on economic theory and its examination in reality, thus aiding motivation, together with enjoyment and improving relations with pupils. This was exactly the conclusion that the students themselves reached (see Table 10).

OTHER FIELD COURSES

As already stated, two of the field courses were excluded from the survey, as their aims were rather more general than solely economics. They were both joint economics and government/politics courses, one to Belgium, the other to London. The make-up of these courses was rather different, for while both spent more than half their time in industry, the remainder was in government institutions, not for their importance to economics, but for themselves. Thus the various institutions of the EEC took up 40% of the time on one course and a range of the Houses of Parliament, the various exchanges and the law courts 25% of the $3\frac{1}{2}$ day visit to London. There is no wish to diminish these courses in any way; they were simply excluded because their aims were somewhat different from those of the economics courses so described and they would have biased the teacher responses. They are certainly interesting and valuable visits for teachers with wider aims for their students.

The final group of courses were one-day events to visit one or a number of companies, often local. In three cases they appeared to be one-off events, but in the fourth, such a visit took place at intervals throughout the 'A' level course, illustrating various aspects. While such events do not have the social or cumulative benefits of a time away from school and home, and may not appear to the student to be sufficiently 'different', they do have the advantage

of being less expensive and there is more chance of the teacher knowing exactly what the company or institution is going to provide, thus being able to concentrate on the aspect of economic theory that is to be illustrated, hence superior preparation and back-up in the classroom is possible. Such an event, or series of events, could be programmed into a two-year course, for instance to illustrate location, investment, government management of the economy, etc., often with local employers explaining the point in detail. Disruption could be minimised by organising this in normal lesson time as far as possible. The decision to do this or concentrate effort on a field course depends totally on the importance of the various benefits thought relevant by the specific teacher and the circumstances of his school. It has been shown that testing economics against reality is the main aim and this could be done by either method. However, if the cumulative benefits and social aims are seen as greater than the cost in money and teacher time organising the event, and the benefits for interest from a purely 'different' experience are seen as important, then a field course may be of more wide-ranging benefit. Different teachers in different circumstances will reach their own conclusions on this issue.

Although this survey of teacher attitudes to economic field courses is not random, it does indicate that the benefits of the course as set by the teachers and perceived by the students are similar. Both regard the economic content as being paramount, with the social aspect in second place, although the teachers connect the two as aiding motivation. Other implicit aims do not gain such great support, such as gaining new skills and career implications. Perhaps the only area where a divergence occurs is predictably that of pupil-teacher relations, which teachers value, but pupils do not see as relevant.

The two field courses investigated in more detail would appear to conform to the typical pattern, although they did rely more heavily on visits to manufacturing industry and far less on listening to lectures or conducting surveys. This reflects the slightly different aims of each field course. However, they were sufficiently typical to draw tentative conclusions for at least visits to manufacturing industry as part of an economics field course.

The number of economics field courses within the country is impossible to estimate, but given the growth of literature in the early 1970s, at least some teachers have adopted the ideas of Brian Robinson and had first-hand experience of this type of economics education. The survey shows that at least some of them are satisfied with the outcome, sufficiently so to initiate others into the fold. However, to counterbalance this, there is no evidence presented from those who may have been disillusioned with the results and abandoned the technique.

is anything but a detailed enquiry into two economics field courses that took place in the Autumn of 1983. Although a large number of students took part in these events, they came from only two schools and were therefore subject to the views of very few economics teachers and indeed took part in a limited number of different experiences on the course. Similarly, the methods used to investigate any changes in opinion as to the subject as a whole or attitudes to various sub-sections of the economics course, with special reference to industry, were rather crude. Time did not allow for sufficient trialling of the EAS and some statements were clearly unsatisfactory. Indeed the more open-ended responses given in the EFCS-S were often more valuable in identifying student views, even though there was an in-built bias, despite anonymity, to write 'teacher-pleasing' comments. This was even more apparent in the student interviews, but these did tend to support the views cited on the survey and give more detailed evidence. However, the interpretation of such evidence is bound to be subjective.

Similarly, the techniques used to discover the extent of field courses in Great Britain was incomplete, and no indication as to their extent can be given, except to say that they do exist in schools. The 'word-of-mouth' method necessarily used rules out any general conclusion as to how many students have the opportunity to gain from the suggested benefits of a field course.

It certainly cannot be claimed that attendance on a field course improves 'A' level grades, as shown in Table 28. However, it would be very surprising if this were the case, for many other events have taken place as far as the individual student is concerned between the two tests. A comparison in the two schools between lower sixth examination results held in June and 'mock' results the following January are shown. Those attending the field course did not perform significantly better than those not attending; indeed one student gained a worse result. The number of students varied due to absences from examinations and students leaving the course.

TABLE 28: COMPARISON OF EXAMINATION RESULTS BEFORE AND AFTER A FIELD COURSE

	SCHOOL A				SCHOOL B			
	PRE SCORE		POST SCORE		PRE SCORE		POST SCORE	
	ATT	NON-ATT	ATT	NON-ATT	ATT	NON-ATT	ATT	NON-ATT
n	24	14	24	13	44	12	43	11
u	37.08	39.21	36.17	39.27	46.8	44.9	44.8	42.5
σ	8.76	8.76	8.21	9.0	10.24	10.27	9.61	10.04
t	-0.722		-1.074		0.544		0.698	
u_{A-NA}	-2.13		-3.1		1.9		2.3	

If, therefore, it cannot be claimed that the field course improved performance in examinations, the question remains: what are the benefits to the participants? Here teachers' aims and student perceptions seem to be very close. The emphasis is clearly on economic understanding, and it is in this area that both placed most emphasis, with the testing of economic theories against reality and and the increased relevance of economics being made apparent to the student. Indeed the suggestion that the course, by its constant emphasis, enabled students to see life in economic terms must be the most valid aim. The course did not evolve into a factory tour to view industrial processes, and when this did occur the pupils were most critical. Although the subjective element of the quality of the speaker was a problem to overcome, the students suggested that it was the economic content that they sought and valued.

As to whether the course changed attitudes by immersing the students in a different environment for a week, what evidence there is must be treated with caution, because the methods used were crude and the lasting effects were not detected. However, it can be stated that the activities did not change student attitudes to economics itself in any detectable way, but on the more concrete level of industry in general, attitudes to industrial relations were seen to be more in line with evidence, but this could be explained by their only hearing the management viewpoint. However, students did show a willingness to be open-minded about what they saw, but were often convinced of the truth of what they were told by an authority figure, as with the detected change in emphasis of the government's role in managing the economy. One advantage of a series of visits is that misinformation may be overcome with new evidence.

Perhaps the most telling conclusion was that each field course is different and that attitudes may change, not as a result of being on an economics course, but from having been on a specific course. The reactions to Sheffield and South Wales were interesting for their differences rather than their similarity. Again evidence, both spoken and visual, was there to support the views, but also pre-conceived ideas were a major factor in how students saw this often new world. The same point was illustrated by the diversity of the changes in opinion with regard to unemployment and the possible solutions.

One of the main dangers from a field course is the tendency to generalise from specific experiences. However, this is counter-acted by the quantity of evidence that is presented within the course and guidance by the individual teacher attempting to rectify this situation.

Student motivation is one of the major problems for any teacher and it is thought by a group of economics teachers that presenting economic theory in a more realistic fashion helps such student interest. Indeed it was suggested by one teacher that the least able students benefitted the most by seeing economic theories working in concrete form. Although this can only be in a restricted field of the economics course, it may have some validity. If healthy scepticism is one quality found lacking in many students, perhaps the course may help to promote less blind faith in the views

of experts. However, one quality that was not lacking was enjoyment. Almost all staff and many students commented on the fact that they had enjoyed the experience and found it worthwhile. While not a justification in itself, this certainly is an aid to motivation and promoting economic understanding.

While this study has been an investigation of one particular aspect of the teaching of economics, it opens the door for other detailed enquiries into other methods that teachers use to promote economic understanding. This could be taken at the more intensive level by looking at different aspects of the field course in more detail, such as the impact of outside speakers, visits to outside agencies, methods of report writing, or time spent away from school. Another project might investigate the benefits of an excursion away from school as opposed to one conducted at intervals throughout the course from a home base. On the other hand, a similar design could be used to investigate totally different aspects of teaching, such as the use of games and simulation exercises, role play, computer software, films and television programmes. All these may be claimed to promote economic understanding and motivate students, but there is little evidence of their effectiveness. A start has been made to suggest alternative presentations of content (see Whitehead (1979)), but this is much more on the level of methods of using the material. An orthodox investigation into cognitive gain was carried out by Wood (1982) in his enquiry on the effectiveness of using computers in economics, and perhaps this should be the starting point.

A totally different aspect of this study has been an attempt to investigate changing student attitudes. This has proved very problematic, for opinion is difficult to measure on a linear scale. Although Whitehead (1984) has shed some light on this question, it remains that subjective evaluation of changing student attitudes is often the most informative, but this is subject to interpretation and greater investigator pressures on the student. Thus any work that focusses upon the formation of, and changes in, attitudes within different aspects of an economics course may well prove valuable.

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APPENDIX 1 EAS: TRIAL QUESTIONS AND RESULTS

AREA	STATEMENT	n	% "undecided"	r
1	*Economics is practical	54	7	2.8
	Economic ideas are stupid	29	7	0
	*Economic ideas are used in the real world	25	8	2.3
2	*I use economic concepts to analyse situations	54	13	1.3
	Studying economics is a waste of time	29	7	0
	*Economic theories are useful to me	25	8	1.3
	After full-time education I shall not use economics	15	27	10.0
3	*Businessmen use economic theory in day-to-day decisions	40	32	4.4
	Managers would find an economics course useful	25	8	22.0
	*Managers would find it useful to take two weeks off work to follow an economics course	15	20	1.0
4	Government planning makes use of economics	40	6	32.0
	*Decisions taken by the Chancellor of the Exchequer are made on mainly economic grounds	40	20	16.0
	*The main considerations in government planning are econonomic	15	20	8.0
	Economic issues are important to governments	14	0	

*Denotes a statement appearing on the final EAS

.../...

AREA	STATEMENT	n	% "undecided"	r
5	*The government should raise the level of its spending	40	20	1.1
	Government assistance to depressed areas should be raised	25	8	22.0
	The government could substantially reduce unemployment	15	6	1.8
	Unemployment is Britain's biggest problem	15	6	0.17
	*Government assistance to depressed areas should be raised by reducing other subsidies to industry	14	21	0.57
6	* British managers do a good job	39	31	0.7
	* Management practices in Britain are sound	39	26	0.53
	Poor management practices have led to Britain's decline	14	21	0.83
7	*Trade unions have too much power in the economy	39	8	3.5
	The government should control the power of trade unions	25	13	4.7
	*The government should control the power of trade unions by legislation	14	14	2.5
8	*Trade unions and management usually co-operate	39	13	0.42
	*Strikes are common in British factories	25	8	1.6
	Trade unions are only interested in political power	14	50	1.3
	Trade union members are most interested in workplace issues	14	43	1.67

*Denotes a statement appearing on the final EAS

.../...

APPENDIX 1/cont'd .

AREA	STATEMENT	n	% "undecided"	r
9	*It is easy to get away with doing nothing in a factory	39	33	0.44
	*People on the shopfloor work hard	39	39	0.89
10	*When private industry does well, Britain prospers	41	17	3.6
	*What is good for companies such as BP and ICI is good for Britain	25	20	2.3
	The FT Index is a good measure of Britain's prosperity	14	21	0.83
	Companies work for the benefit of the country	14	29	0.67
11	*Studying economics will help me get a job	40	27	1.4
	*Employers view economics as a beneficial 'A' level subject to have taken	25	16	9.5
	Employers prefer students who have studied economics	15	53	∞

*Denotes a statement appearing on the final EAS

APPENDIX 2 EFCS-S: RESPONSES TO CLOSED QUESTIONS

QUESTION:	SCHOOL A			SCHOOL B		
	YES	NO	DON'T KNOW	YES	NO	DON'T KNOW
1. Would you recommend the economics field course to another student?	24	0	0	35	1	0
4. Did anything surprise you about life inside a factory?	18	6	0	29	11	0
5. a) Will you eventually consider employment in manufacturing industry?	4	11	9	6	21	13
b) Has the field course changed your opinion of manufacturing industry?	10	9	5	16	19	5
6. a) Have you previously been to the area where the field course was based?	3	21	-	6	34	-
b) Did it differ from what you expected?	12	11	1	18	19	3
7. Do you think that more money should be given to that area by the government?	9	12	3	27	7	6
8. Has the field course changed your opinion of whether economic theory is used in industry?	14	8	2	14	19	6
9. Has the field course changed your attitude to the state of industrial relations in British industry?	14	7	3	20	17	3
10. Has the field course altered your opinion as to what extent the government can influence the economy?	10	11	3	10	18	12

APPENDIX 3a EFCS - T: TYPE OF FIELD COURSE IN GREAT BRITAIN

SCHOOL	FIELD COURSE	DURATION (days)	INVOLVING OTHER SCHOOLS	PREVIOUS COURSES ORGANISED
SURVEY SCHOOLS				
1. KENT	SOUTH WALES	4	NO	8
2. HAMPSHIRE	SOUTH YORKSHIRE	5	NO	10
FIELD COURSES				
3. SUFFOLK	MANCHESTER	5	NO	2
4. LANCASHIRE	TYNESIDE	5	NO	3
5. WEST YORKSHIRE	TEESIDE	5	YES	8
6. WEST YORKSHIRE	TEESIDE	4	NO	2
7. SUSSEX	WEST MIDLANDS	5	NO	3
8. SUSSEX	MERSEYSIDE	4	NO	3
9. EAST LONDON	NORTH MIDLANDS	6	NO	2
10. BERKSHIRE	SOUTH WALES	5	NO	9
11. WEST YORKSHIRE	DURHAM	3	NO	10
12. HAMPSHIRE	TEESIDE	5	YES	15
13. SOUTH LONDON	BRISTOL	4	NO	9
14. HAMPSHIRE	NOTTS/DERBY	5	NO	11
15. DORSET	NORTH MIDLANDS	5	NO	8
16. HAMPSHIRE	TYNESIDE	5	NO	12
ECONOMICS/GOVERNMENT COURSES				
17. HAMPSHIRE	BELGIUM	7	NO	15
18. NORFOLK	LONDON	3½	NO	5
ONE-DAY COURSES				
19. NORTH LONDON		1	NO	7
20. GLAMORGAN		1	NO	15
21. GLAMORGAN		1	NO	2
22. GLAMORGAN		1	NO	4
BUSINESS GAMES COURSES				
23. BUCKINGHAM-SHIRE		3	YES	3

APPENDIX 3b TYPE OF FIELD COURSE IN GREAT BRITAIN (Cont'd)

SCHOOL	PERCENTAGE OF TIME SPENT ON:							
	TOUR	VISIT TO:				TALK BY:		SURVEY
		MANU-FACTURING	SERVICE	NATION-ALISED INDUSTRY	GOVERN-MENT DE-PARTMENT	TRADE UNION	OTHER LECTURE	
1	-	62	-	13	25	-	-	-
2	11	73	-	11	4	-	-	-
3	30	30	16	-	8	8	8	-
4	6	33	11	11	11	6	11	11
5	10	30	20	20	10	-	-	10
6	-	33	-	-	50	-	-	17
7	-	23	-	-	15	15	15	8
8	-	22	11	11	11	11	22	11
9	6	35	-	24	24	-	-	12
10	10	40	-	30	10	-	10	-
11	14	28	-	-	-	-	43	14
12	11	22	22	33	11	-	-	-
13	-	75	-	-	12	-	12	-
14	12	62	12	-	12	-	-	-
15	12	88	-	-	-	-	-	-
16	12	60	12	12	-	-	-	-
17	10	40	10	-	40	-	-	-
18	-	50	25	-	25	-	-	-
19	20	20	20	-	20	-	-	20
20	33	-	50	-	17	-	-	-
21	14	43	-	-	-	-	43	-
22	14	43	-	-	-	14	29	-

N.B. Not all totals sum to 100% due to rounding

APPENDIX 4 EFCS-T: TEACHER PERCEIVED BENEFITS OF ECONOMICS FIELD COURSES

PROPOSED BENEFIT	NUMBER OF RESPONSES:				
	MAJOR IMPOR-TANCE	MINOR IMPOR-TANCE	NO OPINION/ DON'T KNOW	UNIMPOR-TANT	IRREL-EVANT
a) Gaining example of economic theory	11	5	-	-	-
b) Testing economic theories against reality	13	3	-	-	-
c) Meeting adults in their working environment	5	9	1	1	-
d) Seeing relevance of economic theory	15	1	-	-	-
e) Gaining up-to-date information	13	3	-	-	-
f) Viewing 'real life' inside a workplace	10	4	-	2	-
g) Gaining survey skills	3	8	-	1	4
h) Raising motivation towards economics	13	2	-	-	1
i) Seeing life in another area of the country	11	5	-	-	-
j) Career implications	1	8	2	4	1
k) Improving teacher-pupil relations	10	5	-	1	-
l) Pupils meeting students from another school	1	3	1	1	10
m) Enjoyment	10	6	-	-	-
n) Teacher gaining benefits of illustrations	11	4	1	-	-